

**IN THE ABSTRACT:**

Please DELETE the Abstract in its entirety and substitute the attached new Abstract.

This parallel efficiency calculation method can be applied, even in a case where a load balance is not kept, to many parallel processing including a heterogeneous computer system environment, and quantitatively correlates a parallel efficiency with a load balance contribution ratio and a virtual parallelization ratio, as parallel performance evaluation indexes, and parallel performance impediment factor contribution ratios. A parallel efficiency  $E_p(p)$  is calculated by using a load balance contribution ratio  $Rb(p)$  representing a load balance degree between respective processors included in a parallel computer system, a virtual parallelization ratio  $Rp(p)$  representing a ratio, with respect to time, of a portion calculated in parallel by the respective processors to processing executed in the parallel computer system, and a parallel performance impediment factor contribution ratio  $Rj(p)$  representing a ratio of a processing time of a portion of each parallel performance impediment factor to a total processing time of all the processors.